

IN THE CLAIMS

1-15. (Cancelled)

16. (Withdrawn) A method for milling spiral bevel gears and hypoid gears the method comprising the steps of:

providing profile-sharpened or profile-sharpened and additionally form-ground bar cutting blades each having a shank and at one end of the shank a cutting edge profile which enables a first tooth flank, at least a portion of the bottom of a tooth slot, and least a portion of a second tooth flank lying opposite said first tooth flank to be cut in a tooth slot, and

completely cutting in a single milling pass using the cutting edge profile of a bar cutting blade: the first tooth flank, the bottom of the tooth slot, and the second tooth flank opposite the first tooth flank of each tooth slot of a bevel gear to be milled.

17. (Withdrawn) The method as claimed in claim 16, wherein the step of generating a final geometry is by a hobbing method.

18. (Withdrawn) The method as claimed in claim 16, wherein the step of generating a final geometry by a plunge milling method.

19. (Withdrawn) The method as claimed in claim 16, where said method defines one of a rough milling process and a finish milling process.

20. (Currently amended) A profile-sharpened or profile-sharpened and additionally form-ground bar cutting blade for milling spiral bevel gears and hypoid gears comprising:

a shank with a cutting edge profile formed at one end of the shank by the intersection of at least one rake surface, at least two ~~flat~~ clearance surfaces and at least one top surface, said cutting edge profile including, for producing a tooth slot, a first cutting edge for a first tooth flank, a second cutting edge for at least a portion of the second tooth flank opposite said first tooth flank, and a top cutting edge for at least a portion of the bottom of the tooth slot, and wherein

the first and second cutting edges are adapted to completely cut the first and second tooth flanks respectively, and that the top cutting edge is adapted to completely cut the bottom of the tooth slot, thus enabling the tooth slot to be generated to a final geometry using one bar cutting blade in one milling pass, ~~and wherein~~

~~the first and second cutting edges define rake angles (Y_{sx} and Y_{sv}) that are not both zero degrees~~

wherein the at least two clearance surfaces can be ground to provide profile-sharpening of the cutting blade.

21. (Previously presented) The bar cutting blade as claimed in claim 20, wherein the cutting edge profile is formed by the intersection of one rake surface with at least the two clearance surfaces and the top surface.

22. (Previously presented) The bar cutting blade as claimed in claim 20, wherein the cutting edge profile is formed by the intersection of two relatively angled rake surfaces with at least the two clearance surfaces and the top surface.

23. (Cancelled)

24. (Previously presented) The bar cutting blade as claimed in claim 20, wherein the first and second cutting edges have rake angles (Y_{SX} and Y_{SV}) greater than about zero degrees.

25. (Previously presented) The bar cutting blade as claimed in claim 20, wherein the first and second cutting edges have rake angles smaller than about zero degrees in either case.

26. (Previously presented) The bar cutting blade as claim 20, wherein the first and second cutting edges have rake angles (Y_{SX} and Y_{SV}) one of which is greater than about zero degrees and the other of which is smaller than about zero degrees.

27. (Previously presented) The bar cutting blade as claimed in claim 20 wherein the rake surface is worked into the shank.

28. (Previously presented) The bar cutting blade as claimed in claim 24, wherein the rake surface between the first and second cutting edges is curved in a concave configuration.

29. (Previously presented) The bar cutting blade as claimed in claim 20, wherein for form-grinding the bar cutting blade at least one rake surface is a rake surface to be reground.

30. (Previously presented) A profile-sharpened or profile-sharpened and additionally form-ground bar cutting blade as claimed in claim 20 wherein the bar cutting blade is mountable in an end face of a cutter head on a circle and wherein a cutting end of the shank protrudes from the end face of the cutter head.

31. (New) The bar cutting blade as claimed in claim 20, wherein the first and second cutting edges define rake angles (Y_{SX} and Y_{SV}) of about zero degrees.

U.S. Serial No. 10/546,626
Amendment dated August 27, 2009
Reply to Office Action of June 1, 2009

32. (New) The bar cutting blade as claimed in claim 20, wherein the first and second cutting edges have rake angles (Y_{sx} and Y_{sv}) of 0 to -10 degrees.